IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent Application

Inventor(s):	Ronald van Haalen et al.		
Case:	R. van Haalen 2-6-5-1-1 (ALU/126186)		
Serial No.:	10/780,509	**Group Art Unit:**	2454
Filed:	February 17, 2004	**Confirmation #:**	7865
Examiner:	Turner, Ashley D.		
Title:	METHOD AND APPARATUS FOR REBOOTING NETWORK BRIDGES		

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APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2454 mailed January 14, 2009 finally rejecting claims 1 – 27.

In the event that an extension of time is required for this appeal brief to be considered timely, and a petition therefor does not otherwise accompany this appeal brief, any necessary extension of time is hereby petitioned for.

Appellants believe the only fee due is the **$540** Appeal Brief fee which is being charged to counsel's credit card. In the event Appellants are incorrect, the Commissioner is authorized to charge any other fees to Deposit Account No. 50-4802/**ALU/126186**.

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Real Party in Interest

The real party in interest is ALCATEL-LUCENT, INC. The assignee of record is LUCENT TECHNOLOGIES INC, which merged with ALCATEL INC. to form ALCATEL-LUCENT, INC.

Related Appeals and Interferences

Appellants assert that no appeals or interferences are known to Appellants, Appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 1 – 27 are pending in the application. Claims 1 – 27 were originally presented in the application. Claims 4, 5, 14, 19, and 20 have been amended. The final rejection of claims 1 – 27 is appealed.

Status of Amendments

All claim amendments have been entered.

Summary of Claimed Subject Matter

Embodiments of the present invention are generally directed to switched networks and to interconnections between components of the switched networks, such as bridges. More specifically, one embodiment of the present invention is directed to a method for rebooting a bridge in a network containing a plurality of bridges. First, the plurality of bridges is notified that the bridge is about to be updated, then the bridge is updated and/or rebooted. Upon completion of the update, a state of the network that existed prior to the bridge being updated is restored and the plurality of bridges is notified about the completion of the bridge update.

For the convenience of the Board of Patent Appeals and Interferences, Appellants' independent claims 1 , 16, and 26 are pres ented below with citations to various figures and appropriate citations to at least one portion of the specification for elements of the appealed claims.

Claim 1 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 1. (original) A method (300) for rebooting a first bridge (200) in a network, the network containing a plurality of bridges (200) and operating according to a first state, the method comprising:
>
> a) sending (304) notification to one or more second bridges (200) in the network of the first bridge (200) being scheduled for updating, thereby disturbing the first state;
>
> b) updating (306) said first network bridge;
>
> c) restoring (308) the first state of the network; and
>
> d) sending (310) notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

Support for the elements of claim 1 can be found in at least the following sections of Appellants' specification: page 2, line 27 – page 3, line 8; page 4, lines 10 – 20; page

5, lines 26 – 32; page 6, line 1 – page 7, line 22; page 9, line 29 – page 10, line 1; and Figs. 2 – 4.

Claim 7 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 7. (original) The method (300) of claim 1 further comprising the step of the one or more second bridges (200) initiating a condition of not expecting additional messages from the first bridge (200) subsequent to the notification.

Support for the elements of claim 7 can be found in at least the following sections of Appellants' specification: page 3, lines 5 – 8 and page 6, line 16 – page 7, line 5.

Claim 8 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 8. (original) The method (300) of claim 1 further comprising the step of disabling a control plane (204) of the first bridge (200) just prior to commencement of the updating.

Support for the elements of claim 8 can be found in at least the following sections of Appellants' specification: page 3, lines 5 – 8 and page 7, lines 6 – 14 and Fig. 2.

Claim 9 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 9. (original) The method (300) of claim 1 wherein the step of restoring (308) the first state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge (200).

Support for the elements of claim 9 can be found in at least the following sections of Appellants' specification: page 7, line 15 – page 8, line 28 and Fig. 3.

Claim 10 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

10. (original) The method (300) of claim 9 wherein the restoration (308) of the spanning tree further comprises:

c1) retrieving (402) a port state of each port (P1 – P4) of the first bridge (200).

Support for the elements of claim 10 can be found in at least the following sections of Appellants' specification: page 7, line 15 – page 8, line 28 and Figs. 2 – 4.

Claim 11 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

11. (original) The method (300) of claim 10 wherein if the port states are retrieved (402) via hardware, then the restoration (308) further comprises:

c2) waiting for a predetermined period of time to receive new network messages.

Support for the elements of claim 11 can be found in at least the following sections of Appellants' specification: page 7, line 15 – page 8, line 5.

Claim 12 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

12. (original) The method (300) of claim 10 wherein if the port states are retrieved (402) via software, then no waiting period for new network messages occurs.

Support for the elements of claim 12 can be found in at least the following sections of Appellants' specification: page 8, lines 5 – 8.

Claim 13 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 13. (original) The method (300) of claim 9 wherein the step of restoring (308) the first state further comprises the first bridge (308) blocking all of its ports and advertising itself as a root if a BPDU is received on more than one forwarding port.

Support for the elements of claim 13 can be found in at least the following sections of Appellants' specification: page 8, lines 9 – 14 and page 9, lines 17 – 28.

Claim 16 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 16. (original) A computer readable medium (210) containing a program which, when executed, performs an operation (300) of rebooting a first bridge (200) in a network, the network containing a plurality of bridges (200) and operating according to a first state, the operation (300) comprising:
>
> a) sending (304) notification to one or more second bridges (200) in the network of the first bridge (200) being scheduled for updating, thereby disturbing the first state;
>
> b) updating (306) said first network bridge (200);
>
> c) restoring (308) the first state of the network updated; and
>
> d) sending (310) notification to the one or more second bridges (200) of the network that the updating of the first bridge (200) has been completed.

Support for the elements of claim 16 can be found in at least the following sections of Appellants' specification: page 2, line 27 – page 3, line 11; page 4, lines 10 – 20; page 5, lines 6 – 16 and 26 – 32; page 6, line 1 – page 7, line 22; page 9, line 29 – page 10, line 1; page 10, lines 12 – 19; and Figs. 2 – 4.

Claim 22 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 22. (original) The computer readable medium of claim 16 further comprising the step of the one or more second bridges (200) initiating a condition of not expecting additional messages from the first bridge (200) subsequent to the notification.

Support for the elements of claim 22 can be found in at least the following sections of Appellants' specification: page 3, lines 5 – 8; and page 6, line 16 – page 7, line 5.

Claim 23 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 23. (original) The computer readable medium of claim 16 further comprising the step of disabling a control plane (204) of the first bridge (200) just prior to commencement of the updating.

Support for the elements of claim 23 can be found in at least the following sections of Appellants' specification: page 3, lines 5 – 8; page 7, lines 6 – 14; and Fig. 2.

Claim 24 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 24. (original) The computer readable medium of claim 16 wherein the step of restoring (308) the first state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

Support for the elements of claim 24 can be found in at least the following sections of Appellants' specification: page 7, line 15 – page 8, line 28 and Fig. 3.

Claim 26 positively recites (with reference numerals, where applicable, and cites to at least one portion of the specification added):

> 26. (original) An apparatus for updating a network bridge (200) in a plurality of interconnected network bridges (200) operating according to a first state comprising:
>
> a forwarding plane (202) adapted to provide physical control of the states of a plurality of ports in the bridge (200); and
>
> a control plane (204) adapted for issuing and executing instructions that control the physical action of the forwarding plane (202) including:
>
> a) sending (304) notification to one or more second bridges (200) in the network of the first bridge (200) being scheduled for updating, thereby disturbing the first state;
>
> b) updating (306) said first network bridge (200);
>
> c) restoring (308) the first state of the network; and
>
> d) sending (310) notification to the one or more second bridges (200) of the network that the updating of the first bridge (200) has been completed.

Support for the elements of claim 26 can be found in at least the following sections of Appellants' specification: page 3, lines 12 – 25; page 4, lines 10 – 20 and 26 – 32; page 5, lines 6 – 18 and lines 26 – 32; page 6, line 1 – page 7, line 22; page 9, line 29 – page 10, line 1; and Figs. 2 – 4.

Grounds of Rejection to be Reviewed on Appeal

Claims 1 – 27 are rejected under 35 U.S.C. §102(b) as being anticipated by Seaman et al., U.S. Patent No. 6,611,502 B1 (hereinafter "Seaman").

ARGUMENTS
Rejection Under 35 U.S.C. §102

Claims 1 – 27 are rejected under 35 U.S.C. §102(b) as being anticipated by Seaman. The rejection is traversed.

The Applicable Law

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim. *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

"To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.'" *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999); *see also* MPEP § 2112.

The Reference

In general, Seaman is directed to algorithms for managing a tree of network devices in a data network according to a spanning tree protocol. More specifically, Seaman provides for modifications of the spanning tree algorithm such as to allow news regarding network components failures to propagate quickly within a network, where the network includes local area network (LAN) segments interconnected by protocol entities, such as bridges. To enable early link failure detection, port hello timers of protocol entities are introduced and set to suit local link characteristics while the protocol entities are configured to process topology information sent by designated protocol entities even when such information is inferior to information previously received. The spanning tree is recomputed upon receipt of a message having a message age greater than its

accompanying maximum age or if the port hello times algorithm times out. To prevent creation of a data loop caused by re-computing topologies in response to old information and rapid propagation of changes, respective rules for burning out the information are used (see Seaman, Abstract; col. 1, lines 20 – 24; and col. 3, line 46 – col. 5, line 64; see also claim 1).

Independent Claim 1

The Examiner's Arguments

A. The Examiner asserts that Seaman teaches "sending notification to one or more second bridges in the network of the first bridge being scheduled for updating," as recited in independent claim 1. In particular, the Examiner suggests that Seaman teaches sending notification because Seaman discloses that whenever a bridge in a network, which is managed according to the spanning tree protocol, detects a change in topology, the bridge notifies a root of such a change, which in turn communicates the change to all bridges in the tree (see Final Office Action, pages 2 and 3). The Examiner further suggests that the feature of "the first bridge being scheduled for updating" is taught by Seaman because Seaman discloses that according to the spanning tree protocol, each port of a bridge may assume two states: a blocking state in which frames are not forwarded through the port and a forwarding state in which the frames are forwarded through the port. To transition between the two states, the port has to proceed through transitional states, i.e., listening and learning states, where in the listening state, the port monitors network topology information for an interval (forward delay timer). If there is no change in the port state during the interval, the port transitions to the learning state (see Final Office Action, pages 20 and 21).

B. The Examiner asserts that Seaman teaches "restoring the first state of the network," as recited in independent claim 1. In particular, the Examiner suggests that "the first state is functional then there was disruption, recreating takes place then it goes to its original functioning state." The Examiner also notes that nothing in Applicants' claim 1 requires the restored network topology to be the same network topology as before the failure (see Final Office Action, pages 21 – 22).

C. The Examiner asserts that Seaman teaches "sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed" in col. 2, lines 51 – 60 (see Final Office Action, pages 2 – 3).

Appellants' Response to the Examiner's arguments

A. Seaman does not teach or suggest "sending notification to one or more second bridges in the network of the first bridge being scheduled for updating," as recited in independent claim 1 (emphasis added).

In response to Appellants' request to clarify where Seaman teaches content of the Appellants' notification, i.e., the "the first bridge being scheduled for updating," the Examiner cites a new portion of Seaman, i.e., col. 2, lines 18 – 33 (see Final Office Action, page 20). In this portion, Seaman describes that each port on a bridge can assume a blocking state and forwarding state. Seaman further discloses that to transition between the two states, the port may assume transitioning states: a listening state and a learning state, where in the listening state, the port monitors topology related information.

However, nowhere in the cited portion does Seaman describe that port states are changed according to a schedule. In fact, nowhere in the reference does Seaman use a "schedule"-related term. In contrast, because the notification messages described in the cited portions of Seaman are BPDU packets indicating topology changes in the network caused by active components failures in the network, such notifications simply cannot describe an event that has been scheduled. Network failures, such as an active link failure, are usually unexpected, and thus, non-scheduled.

Furthermore, assuming that the cited portion describes that the bridge or its ports may be updated, such a disclosure in itself is not sufficient to anticipate the above recited features of claim 1. Claim 1 recites sending notification of the first bridge being scheduled for updating. In contrast, the cited portions of Seaman describe that bridges are notified about topology changes of the network. Because notifying bridges about topology changes is not the same as notifying these bridges that a particular bridge is about to be updated, Seaman does not teach or suggest sending notifications of the first bridge being scheduled for updating.

B. Contrary to the Examiner's suggestion, Seaman fails to disclose "restoring the first state of the network," as recited in independent claim 1 (emphasis added).

More specifically, the portion of Seaman cited and relied upon by the Examiner, i.e., col. 2, lines 51 – 60, discusses what happens in a spanning tree network when an active link fails. In particular, when a bridge detects a topology change caused by the link failure, such a bridge notifies the root of the network, which propagates the notification to the remaining bridges in the network. When the remaining bridges receive such a notification, they time-out their forwarding databases on all ports, recreate topology information, and relearn MAC addresses for the forwarding databases. In other words, Seaman describes how the network may continue functioning properly even though a component of the network, i.e., the link, has failed. However, because one of the network components has failed, the re-created network topology differs from the network topology as it was before the failure has occurred. Accordingly, Seaman simply cannot teach or suggest Appellants' feature of "restoring the first state of the network."

The Examiner appears to suggest that the first state may be interpreted as a state when the network is functional because Appellants' claim 1 does not require the restored network topology to be the same network topology as before the link failure. Appellants respectfully disagree with the Examiner's interpretation.

In particular, Appellants' claim 1 recites:

> "A method for rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the method comprising:
>
> ...
>
> distributing the first state
>
> ...
>
> restoring the first state of the network,"

(emphasis added). Therefore, as explicitly recited in claim 1, the network operates according to a first state, where the first state describes a particular manner of the network operating, such as a topology of the network. This first state is subsequently restored.

The Examiner's proposed interpretation ignores one of these two features of Appellants' claim 1, i.e. the network operating and according to the first state. More specifically, the Examiner equates Appellants' first state to the network being functional, or operable. If such an interpretation were correct, the description of how the network operates, i.e., according to the first state, would be extraneous because "the first state" and the network operating are one of the same according to the Examiner's interpretation. Such an interpretation contradicts the principle of claim interpretation that each and every word of the claim must be considered to determine the scope of the claim. Therefore, the Examiner's interpretation is improper. As discussed above, though Seaman discloses restoring the network functionality, when the functionality is restored, the network operates differently because the failed component that previously was an active network component is not a part of the network with the restored functionality.

Moreover, Appellants' claim expressly recites "distributing the first state." Seaman is silent with respect to distributing information that the network is operating. However, if the first state is to be interpreted as the state of the network being functional, to anticipate Appellants' claim 1, Seaman must disclose distribution of such information. Accordingly, for at least the reasons just discussed, Seaman fails to teach or suggest at least the feature of "restoring the first state of the network."

C. Seaman fails to teach or suggest "sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed," as recited in claim 1 (emphasis added).

The portion of Seaman cited by the Examiner states:

> In a network of bridges which have a topology managed according to the spanning tree protocol, whenever a bridge detects a change in topology, such as for example when an active link fails, the bridge notifies the root of the active topology with a bridge protocol data unit BPDU packet. The protocol entity at the root of the topology then communicates the change to all of the bridges in the tree. Upon receiving such a notification, the bridges time-out their forwarding databases on all ports, recreate the topology and relearn the MAC addresses for the forwarding databases (emphasis added).

As may be seen from the above recited portion of Seaman, the only communications discussed in the cited portion are the BDPU packets that are used to

notify the root and other bridges in the network about the link failure. However, Seaman does not explicitly disclose that such BDPU packets contain notifications that the scheduled updating of the first bridge has been completed and the Examiner fails to provide any arguments why such a notification might be an inherent part of the BPDU packet.

Accordingly, for at least the reasons discussed above regarding A, B, and C points, Seaman does not teach or suggest each and every feature of Appellants' claim 1, and thus, claim 1 is not anticipated by Seaman and is allowable under 35 U.S.C. §102.

Dependent Claims 2 – 15

Claims 2 – 6, 10, and 14 – 15

Appellants respectfully submit this Appeal Brief does not include separate responses to the Examiner's arguments regarding claims 2 – 6, 10, and 13 – 15. Rather, for the purpose of this appeal only, Appellants agree that allowability of dependent claims 2 – 6, 10, and 13 – 15 depends on allowability of independent claim 1, where each such claim is allowable for at least the reasons discussed above with respect to claim 1. However, Appellants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims, including claims 2 – 6, 10, and 13 – 15.

Claim 7

The Examiner's Arguments

The Examiner indicates that the feature of "the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification," recited in claim 7, is taught by Seaman in col. 7 line, 62 – col. 8, line 10. The Examiner does not provide any particular arguments but rather recites what the cited portion of Seaman states (see Final Office Action, page 9).

Appellants' Response to the Examiner's arguments

Seaman does not teach or suggest the above recited features of claim 7. More specifically, the cited portion of Seaman is silent regarding the features of claim 7.

Rather, it describes differences between the propagation rules introduced by Seaman and the propagation rules defined by 802.1D standard. Such differences include:

- allowing bridges to send BPDU messages under certain circumstances without first receiving a message from the root;
- allowing bridges to delay a reply to inferior information; and
- introduction of a link hello timer.

However, the cited portion does not discuss:

- initiating a special condition at one bridge,
- initiating such a condition subsequent to the notification about upcoming update at another bridge; or
- that this special condition is the condition of not expecting additional messages from the another bridge.

Anticipation requires the disclosure in a reference of each and every feature of the claim, as arranged in the claim. Appellants fail to see how the cited portion satisfies such a requirement. If the Examiner is of a different opinion, Appellants respectfully request the Examiner to clarify his arguments regarding claim 7, for example, by describing a relationship/mapping between the features of claim 7 and specific elements/parts of the cited portion of Seaman, as understood by the Examiner.

Claim 8

The Examiner's Arguments

The Examiner indicates that the feature of "disabling a control plane of the first bridge just prior to commencement of the updating," recited in claim 8, is taught by Seaman in col. 10 line 58 – col. 11, line 28. The Examiner does not provide any particular arguments but merely recites what the cited portion of Seaman states (see Final Office Action, pages 10 – 11).

Appellants' Response to the Examiner's arguments

Seaman does not teach or suggest the above recited features of claim 8. More specifically, the cited portion is silent regarding the process of disabling a control plane of the first bridge and/or that the control plane is disabled just prior to commencement of

the updating. Rather, the cited portion discusses a process for managing the propagation of configuration BPDU messages, and in particular, logic executed by a protocol entity for determining where to send configuration BPDU messages in response to an update of the spanning tree information for a bridge. Such logic includes various scenarios describing what happens with configuration BPDU messages depending on whether the bridge becomes a root or not, whether the update was caused by another configuration BPDU message from another bridge, and whether for a BPDU message received on a particular port, the port becomes or continues to be a root port. However, Seaman does not describe that such logic includes the features of Appellants' claim 8. If the Examiner chooses to maintain the present rejection, Appellants respectfully request the Examiner to clarify his arguments regarding claim 8, for example, by describing relationship/mapping between the features of claim 8 and specific elements/parts of the cited portion of Seaman, as understood by the Examiner.

Claim 9

The Examiner's Arguments

The Examiner indicates that the feature of "wherein the step of restoring the first state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge," recited in claim 9, is taught by Seaman in col. 10 line 58 – col. 11, line 28. The Examiner does not provide any particular arguments but merely recites what the cited portion of Seaman states (see Final Office Action, pages 12 – 13).

Appellants' Response to the Examiner's arguments

Seaman does not teach or suggest the above recited features of claim 9. More specifically, the cited portion is silent regarding whether the original spanning tree is reestablished. Rather, the cited portion discusses a process for managing the propagation of a configuration BPDU messages, and in particular, logic executed by a protocol entity for determining where to send configuration BPDU messages in response to an update of the spanning tree information for a bridge. Such logic includes various scenarios describing what happens with configuration BPDU messages depending on whether the

bridge becomes a root or not, whether the update was caused by another configuration BPDU message from another bridge, and whether for a BPDU message received on a particular port, the port becomes or continues to be a root port.

Further, as discussed above, the Seaman arrangement focuses on propagation of information that a network component has failed. For example, when a bridge detects a topology change caused by a link failure, such a bridge notifies the root of the network, which propagates the notification to the remaining bridges in the network. When the remaining bridges receive such a notification, they time-out their forwarding databases on all ports, recreate topology information, and relearn MAC addresses for the forwarding databases. In other words, Seaman describes how the network may continue functioning properly even though the component of the network, i.e., the link, has failed. The portion cited by the Examiner describes the process used to propagate the information. However, because the network component has failed, no matter what a particular port or bridge does upon receiving the information, the original spanning tree cannot be reestablished. The reestablished tree would lack a component of the original spanning tree, i.e. the component that has failed. Accordingly, Seaman simply cannot teach or suggest Applicants' feature of "reestablishing an original spanning tree that existed in the network prior to the update of the first bridge."

Claim 11

The Examiner's Arguments

The Examiner indicates that features of claim 11 are taught in col. 5, lines 26 – 31 of Seaman (see Final Office Action, pages 14 – 15).

Appellants' Response to the Examiner's arguments

The cited portion of Seaman does not teach or suggest at least retrieving port states via hardware as required by Appellants' claim 11. More specifically, the cited portion states:

> "According to this aspect of the invention, the network devices include resources to propagate a configuration messages including the time interval parameter on a port in the designated port role periodically within

the time interval indicated by the time interval parameter, whether or not the device is the root of the network."

As may be seen from the above recited portion, neither a process of retrieving port states nor how this process is performed is discussed. Furthermore, the term "hardware" is not mentioned and the Examiner fails to acknowledge this feature of claim 11 (see Final Office Action, pages 14 – 15). Therefore, the Examiner's argument that all the features of claim 11 are taught by Seaman fails.

Claim 12

The Examiner's Arguments The Examiner asserts that Seaman teaches all of the features of claim 12 in col. 6, lines 38 – 52 (see Final Office Action, page 15).

Appellants' Response to the Examiner's arguments

The cited portion of Seaman does not teach or suggest at least: "wherein if the port states are retrieved via software, then no waiting period for new network messages occurs," as recited in claim 12 (emphasis added). Rather, the cited portion is completely silent regarding a waiting period for new network messages and whether such a period occurs when the port states are retried via software. Accordingly, because at least one of the features of claim 12 is not disclosed, the Examiner's argument, that all the features of claim 11 are taught by Seaman, fails.

Independent Claim 16

The Examiner's Arguments

The Examiner asserts that claim 16 is rejected for the same reasons as claim 1 because claim 16 recites the same limitation and is distinguished only by statutory category (see Final Office Action, page 3).

Appellants' Response to the Examiner's arguments

Seaman does not teach or suggest all the features of claim 16 as arranged in the claim, and thus, does not anticipate Appellants' claim 16.

First, claim 16 does recite features similar to the features of claim 1 that are discussed above. Therefore, claim 16 is allowable under 35 U.S.C. §102 for at least the reasons discussed above with respect to claim 1.

Second, claim16 recites:

> "A computer readable medium containing a program which, when executed, performs an operation of rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the operation comprising..."

Anticipation requires the presence in a single prior art disclosure of each and every feature of the claimed invention, arranged as in the claim. The Examiner fails to indicate where the above recited features of claim 16 are disclosed in Seaman. Furthermore, nowhere in the disclosure does Seaman even mention terms such as "computer," "computer readable medium," "computer readable storage medium," or "program." Accordingly, Seaman fails to teach or suggest each and every feature of Appellants' independent claim 16.

Dependent Claims 17 – 25

Claims 17 – 21 and 25

Appellants respectfully submit this Appeal Brief does not include separate responses to the Examiner's arguments regarding claims 17 – 21 and 25. Rather, for the purpose of this appeal only, Appellants agree that allowability of dependent claims 17 – 21 and 25 depends on the allowability of independent claim 16, where each such claim is allowable for at least the reasons discussed above with respect to claim 16. However, Appellants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims, including claims 17 – 21 and 25.

Claim 22

Claim 22 depends from independent claim 16, and thus, includes all of the features of claim 16. As such, for at least the reasons discussed above regarding claim 16, claim 22 is also allowable under 35 U.S.C. §102 over Seaman.

Further, claim 22 recites features similar to the features of claim 7 that are discussed above. Therefore, claim 22 is also allowable under 35 U.S.C. §102 over Seaman for at least the reasons discussed above with respect to claim 7.

Claim 23

Claim 23 depends from independent claim 16, and thus, includes all of the features of claim 16. As such, for at least the reasons discussed above regarding claim 16, claim 23 is also allowable under 35 U.S.C. §102 over Seaman.

Further, claim 23 recites features similar to the features of claim 8 that are discussed above. Therefore, claim 23 is also allowable under 35 U.S.C. §102 over Seaman for at least the reasons discussed above with respect to claim 8.

Claim 24

Claim 24 depends from independent claim 16, and thus, includes all of the features of claim 16. As such, for at least the reasons discussed above regarding claim 16, claim 24 is also allowable under 35 U.S.C. §102 over Seaman.

Further, claim 24 recites features similar to the features of claim 9 that are discussed above. Therefore, claim 24 is also allowable under 35 U.S.C. §102 over Seaman for at least the reasons discussed above with respect to claim 9.

Independent Claim 26

The Examiner's Arguments

The Examiner asserts that all of the features of claim 26 are taught by Seaman in col. 10, lines 58 – 67 and col. 11, lines 1 – 28 and Fig. 4. The Examiner does not provide any explanation as to how the cited portion is applicable or comparable to Appellants' claim 26, but rather merely recites what is disclosed in the cited portion (see Final Office Action, pages 18 – 20).

Appellants' Response to the Examiner's arguments

First, because claim 26 recites features similar to the features of claim 1 that are discussed above, Appellants incorporate all of the arguments presented regarding claim 1

in the following response to the Examiner's arguments regarding claim 26. Thus, Appellants respectfully submit that claim 26 is allowable for at least the reasons discussed above with respect to claim 1.

Second, the portions of Seaman cited by the Examiner with respect to claim 26, i.e., col. 10, lines 58 – 67 and col. 11, lines 1 – 28 and Fig. 4, fail to disclose each and every feature of claim 26 as arranged in the claim.

Fig. 4 of Seaman includes a flow-chart illustrating a process for managing the propagation of a configuration BPDU messages. In particular, Fig. 4 illustrates logic executed by a protocol entity for determining where to send configuration BPDU messages in response to an update of the spanning tree information for a bridge. Such logic includes various scenarios describing what happens with configuration BPDU messages depending on whether the bridge becomes a root or not, whether the update was caused by another configuration BPDU message from another bridge, and whether for a BPDU message received on a particular port, the port becomes or continues to be a root port.

However, nowhere does this portion disclose an apparatus comprising:

> "a forwarding plane adapted to provide physical control of the states of a plurality of ports in the bridge; and
>
> a control plane adapted for issuing and executing instructions that control the physical action of the forwarding plane including:
>
> a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;
>
> ...
>
> c) restoring the first state of the network; and
>
> d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed,"

as recited in claim 26 (emphasis added). Rather, the cited portion merely discloses that a bridge may be updated upon receiving a configuration BPDU, that configuration BPDU messages may be received, generated and sent, and that the messages age may be increased or set to zero.

Accordingly, because Seaman does not disclose all of the features of claim 26 as arranged in the claim, claim 26 is allowable under 35 U.S.C. §102 over Seaman.

Appellants note that the Examiner merely recites the cited portions of Seaman in the Office Action without providing any explanation. If, upon reviewing the Appellants'

arguments, the Examiner decides to maintain the present rejection, Appellants respectfully request the Examiner to clarify his arguments, for example, by describing a relationship/mapping between the features of claim 26 and specific elements/parts of the cited portions of Seaman, as viewed by the Examiner.

Dependent Claim 27

Appellants respectfully submit this Appeal Brief does not include separate responses to the Examiner's arguments regarding claim 27. Rather, for the purpose of this appeal only, Appellants agree that allowability of dependent claim 27 depends on the allowability of independent claim 26, where claim 27 is allowable for at least the reasons discussed above with respect to claim 26. However, Appellants are not acquiescing to the Examiner's statements as to the applicability of the art of record to the pending claims, including claim 27.

Conclusion

Thus, Appellants submit that all of the claims presently in the application are allowable.

For the reasons advanced above, Appellants respectfully urge that the rejection of claims 1 – 27 is improper. Reversal of the rejection of the Final Office Action is respectfully requested.

Respectfully submitted,

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CLAIMS APPENDIX

1. (original) A method for rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the method comprising:

a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;

b) updating said first network bridge;

c) restoring the first state of the network; and

d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

2. (original) The method of claim 1 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit (BPDU) along a plurality of forwarding links connected to said first bridge.

3. (original) The method of claim 2 wherein the special BPDU is selected from the group consisting of a normal spanning tree protocol configuration and a rapid spanning tree protocol configuration.

4. (previously presented) The method of claim 3 wherein the special BPDU message for the normal STP configuration is configBPDU.

5. (previously presented) The method of claim 3 wherein the rapid spanning tree protocol (RSTP) BPDU has a message age set to a value that does not occur during normal RSTP operation.

6. (original) The method of claim 5 wherein the value is MAX age + 1.

7. (original) The method of claim 1 further comprising the step of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification.

8. (original) The method of claim 1 further comprising the step of disabling a control plane of the first bridge just prior to commencement of the updating.

9. (original) The method of claim 1 wherein the step of restoring the first state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

10. (original) The method of claim 9 wherein the restoration of the spanning tree further comprises:

c1) retrieving a port state of each port of the first bridge.

11. (original) The method of claim 10 wherein if the port states are retrieved via hardware, then the restoration further comprises:

c2) waiting for a predetermined period of time to receive new network messages.

12. (original) The method of claim 10 wherein if the port states are retrieved via software, then no waiting period for new network messages occurs.

13. (original) The method of claim 9 wherein the step of restoring the first state further comprises the first bridge blocking all of its ports and advertising itself as a root if a BPDU is received on more than one forwarding port.

14. (previously presented) The method of claim 7 wherein the initiated condition includes the one or more second bridges sending self-generated configBPDU messages.

15. (original) The method of claim 1 wherein the step of sending notification to other bridges of first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

16. (original) A computer readable medium containing a program which, when executed, performs an operation of rebooting a first bridge in a network, the network containing a plurality of bridges and operating according to a first state, the operation comprising:

a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;

b) updating said first network bridge;

c) restoring the first state of the network updated; and

d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

17. (original) The computer readable medium of claim 16 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit (BPDU) along a plurality of forwarding links connected to said first bridge.

18. (original) The computer readable medium of claim 16 wherein the special BPDU is selected from the group consisting of a normal spanning tree protocol configuration and a rapid spanning tree protocol configuration.

19. (previously presented) The computer readable medium of claim 18 wherein the special BPDU message for the normal STP configuration is configBPDU.

20. (previously presented) The computer readable medium of claim 18 wherein the rapid spanning tree protocol (RSTP) BPDU has a message age set to a value that does not occur during normal RSTP operation.

21. (original) The computer readable medium of claim 20 wherein the value is MAX age + 1.

22. (original) The computer readable medium of claim 16 further comprising the step of the one or more second bridges initiating a condition of not expecting additional messages from the first bridge subsequent to the notification.

23. (original) The computer readable medium of claim 16 further comprising the step of disabling a control plane of the first bridge just prior to commencement of the updating.

24. (original) The computer readable medium of claim 16 wherein the step of restoring the state of the network further comprises reestablishing an original spanning tree that existed in the network prior to the update of the first bridge.

25. (original) The computer readable medium of claim 16 wherein the step of sending notification to other bridges of first bridge update completion further comprises the one or more second bridges receiving a normal BPDU from the first bridge.

26. (original) An apparatus for updating a network bridge in a plurality of interconnected network bridges operating according to a first state comprising:

a forwarding plane adapted to provide physical control of the states of a plurality of ports in the bridge; and

a control plane adapted for issuing and executing instructions that control the physical action of the forwarding plane including:

a) sending notification to one or more second bridges in the network of the first bridge being scheduled for updating, thereby disturbing the first state;

b) updating said first network bridge;

c) restoring the first state of the network; and

d) sending notification to the one or more second bridges of the network that the updating of the first bridge has been completed.

27. (original) The apparatus of claim 26 wherein the step of sending notification further comprises the first bridge sending a special bridge protocol data unit along a plurality of forwarding links connected to said first bridge.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None